Repair

334654A

EN

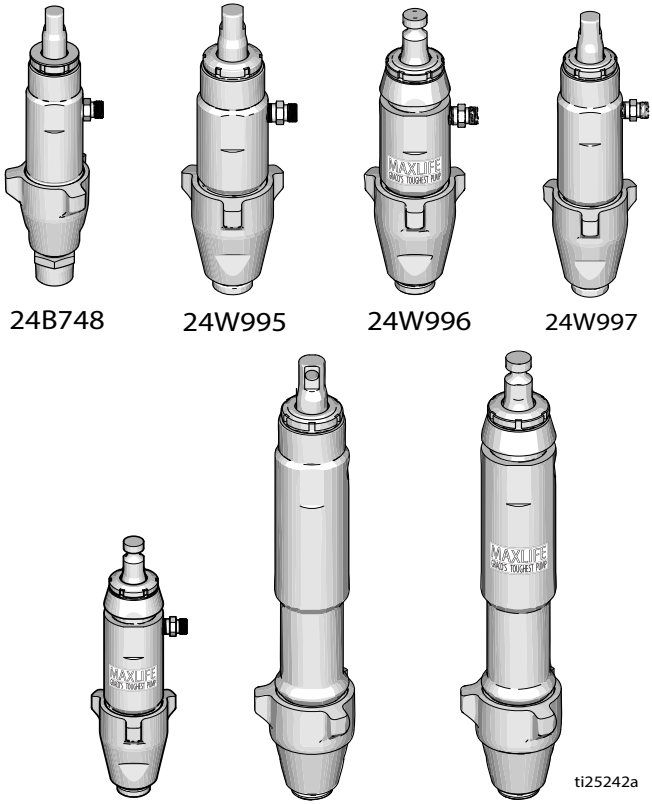
GH™130/200/230/300 and DutyMax GH/EH™230/300 Displacement Pump

For professional use only.
Not approved for use in explosive atmosphere or hazardous locations.
For portable airless spraying of architectural paints and coatings.

Models: 24B748, 24W995, 24W996, 24W997, 24W998, 24W999, 24X001

Important Safety Instructions

Read all warnings and instructions in this manual and related manuals.
Be familiar with the controls and the proper usage of the equipment.
Save these instructions.



24B748 24W995 24W996 24W997

24W998 24W999 24X001

Use only genuine Graco replacement parts.
The use of non-Graco replacement parts may void warranty.

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Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠WARNING

SKIN INJECTION HAZARD

High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, **get immediate surgical treatment.**

- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
- Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.
- Use Graco nozzle tips.
- Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the **Pressure Relief Procedure** for turning off the unit and relieving the pressure before removing the nozzle tip to clean.
- Equipment maintains pressure after power is shut off. Do not leave the equipment energized or under pressure while unattended. Follow the **Pressure Relief Procedure** when the equipment is unattended or not in use, and before servicing, cleaning, or removing parts.
- Check hoses and parts for signs of damage. Replace any damaged hoses or parts.
- This system is capable of producing 3300 psi. Use Graco replacement parts or accessories that are rated a minimum of 3300 psi.
- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
- Verify that all connections are secure before operating the unit.
- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.

PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:

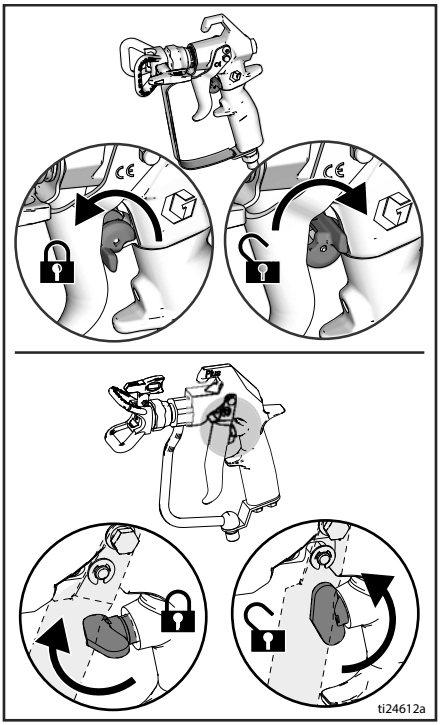
- Protective eye wear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

CALIFORNIA PROPOSITION 65

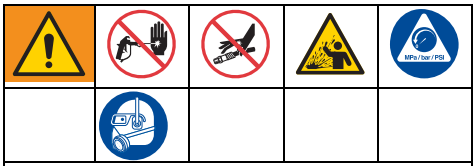
This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

Trigger Lock

Always engage the trigger lock when sprayer is stopped to prevent the gun from being triggered accidentally by hand or if dropped or bumped.

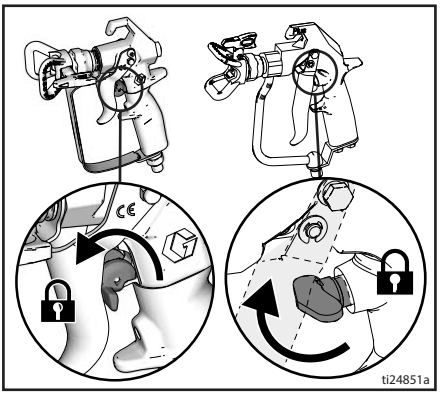


Pressure Relief Procedure

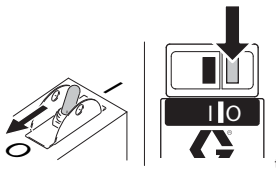


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashed fluid and moving parts, follow the **Pressure Relief Procedure** whenever sprayer is stopped and before sprayer is cleaned or checked, and before equipment is serviced.

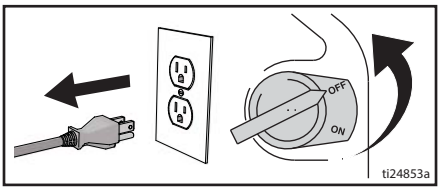
1. Engage trigger lock.

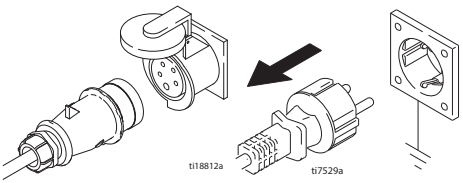


2. If applicable, turn electric motor ON/OFF switch to **OFF** position. Wait 7 seconds for power to dissipate.

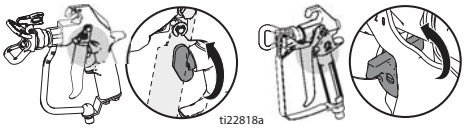


3. Unplug power cord or shut engine off.





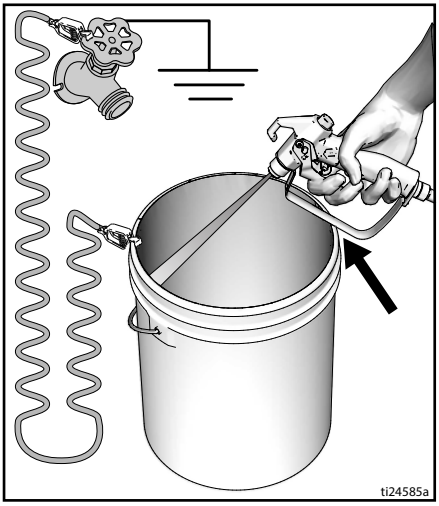
4. Disengage trigger lock.



5. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.

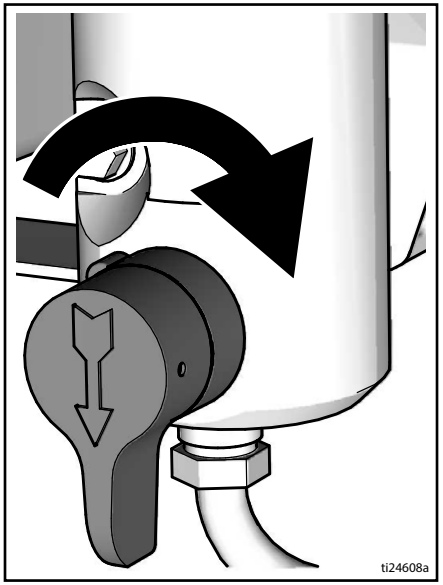
   Solvent and oil-based fluids: follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete.

   Do not place pail on a non-conductive surface such as paper or cardboard which interrupts grounding continuity.



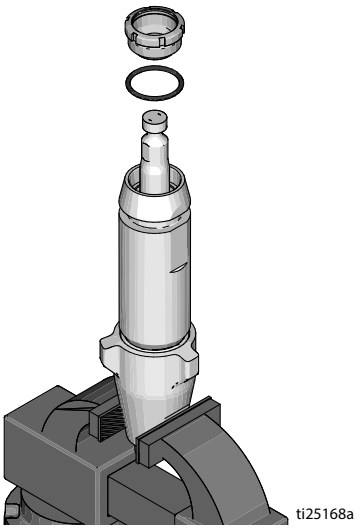
6. Engage trigger lock.

7. Open any fluid drain valves in system. Leave drain valves open until ready to spray again.

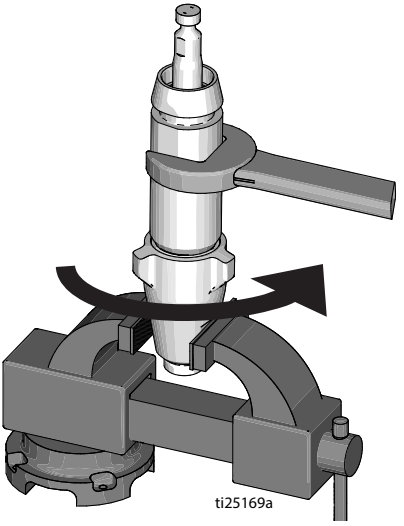


Disassemble Pump

1. Remove packing nut and throat adjustment spacer.



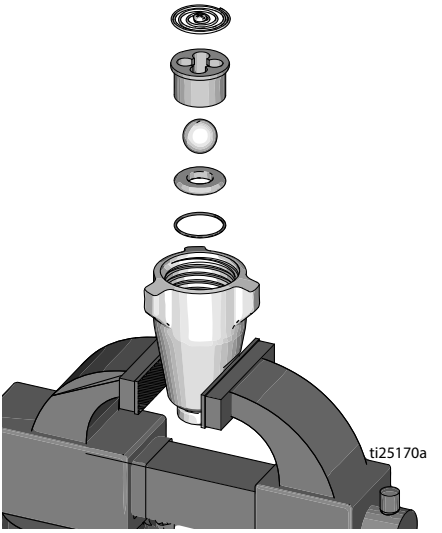
2. Unscrew cylinder from intake valve.



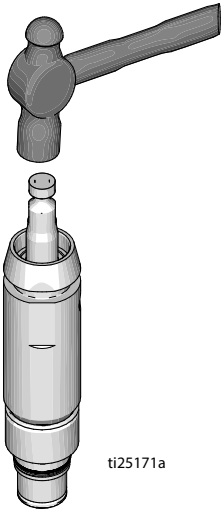
3. Disassemble intake valve. Clean and inspect. O-ring may require a pick for removal.

NOTICE

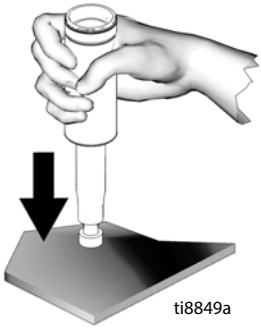
If using a pick to remove the O-ring use care to avoid damage to the machined surfaces.



4. Tap piston rod out of cylinder with a hammer or flip over and tap piston rod out against a bench.

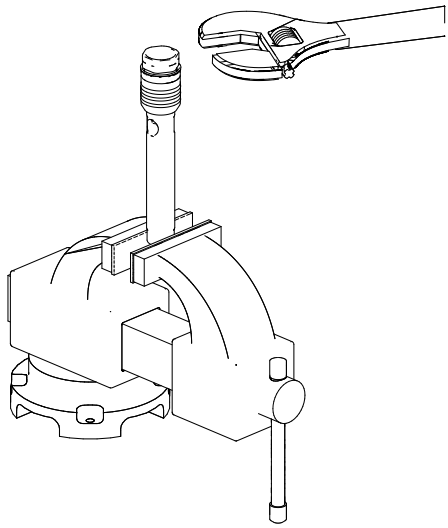


5. Remove piston rod from sleeve.

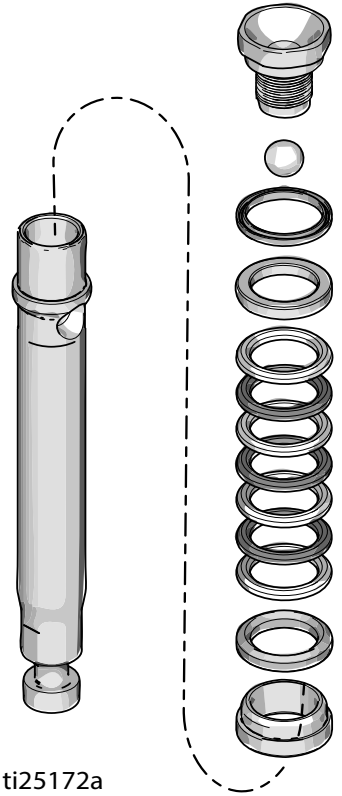


Do not clean or wipe the piston valve threads. Cleaning the piston valve threads could destroy the special sealing patch and cause the piston valve to come loose during operation, causing a pump burst and possible serious bodily injury.

6. Unscrew piston valve from piston rod.



7. Clean and inspect parts. (The piston has a special thread locking/sealing patch. Do not remove the patch. The patch allows for disassembly/assembly procedures before it is necessary to apply thread sealant to the threads. On fifth assembly apply thread sealant to threads.



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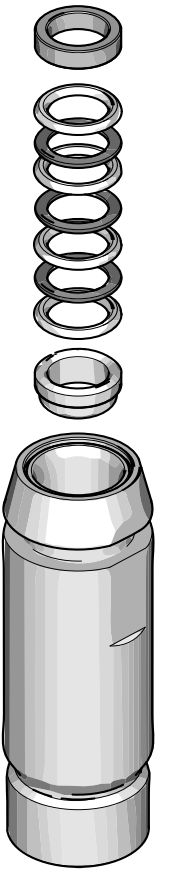
8. Remove and discard throat packing and glands from the cylinder.



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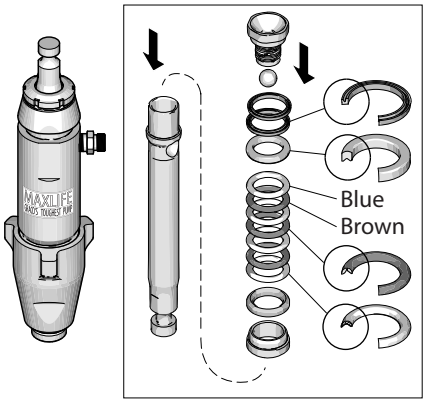
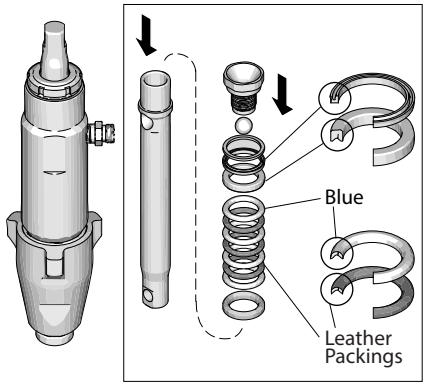
Assemble Pump

1. If applicable, soak leather packings in SAE 30W oil for one hour before assembly.





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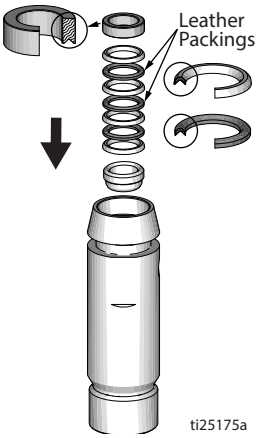

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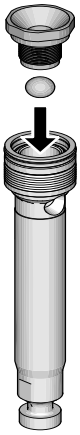
2. Install ball in piston rod. Apply thread sealant to piston valve threads; ensure that none gets on the ball.



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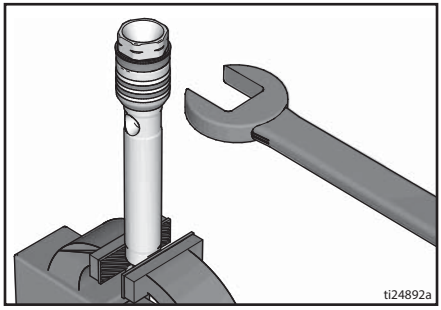
3. Torque to 55 ± 3 ft-lb (75 ± 4 N•m).



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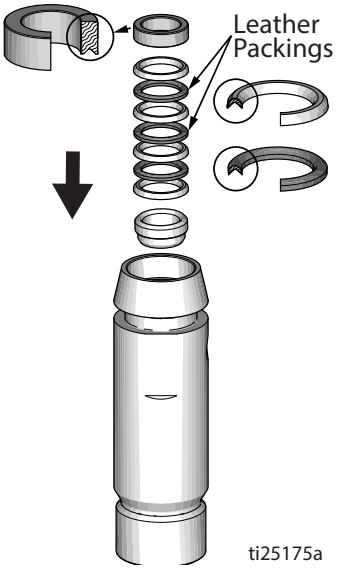
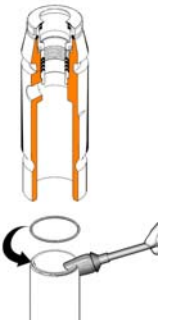
4. Assemble leather throat packings soaked earlier.

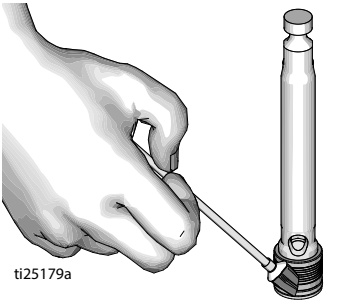


5. Loosely install packing nut with o-ring onto cylinder.

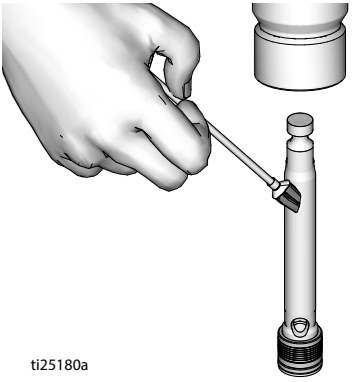
6. Install o-rings inside cylinder and on sleeve. Slide sleeve into bottom of cylinder. Replace o-ring if necessary.



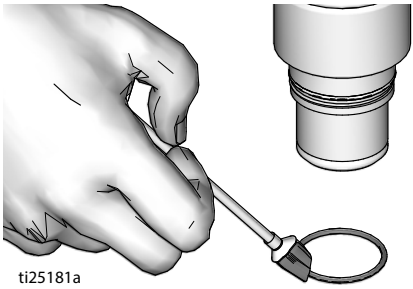
7. Apply liberal amounts of grease or oil to piston packings.



8. Grease top inch or two of piston rod that will go through the cylinder throat packings. Gently guide displacement rod up through throat packings. Tap bottom of piston valve as necessary with a leather or plastic hammer.



9. Grease o-ring and place on outside diameter ring groove.



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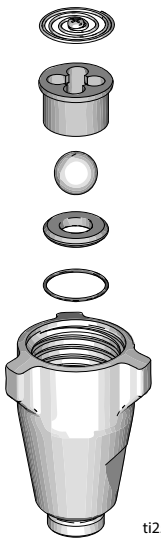
10. Clean seat thoroughly. Reassemble intake valve with a seat, ball, and new o-ring. Seat may be flipped over and used on other side.



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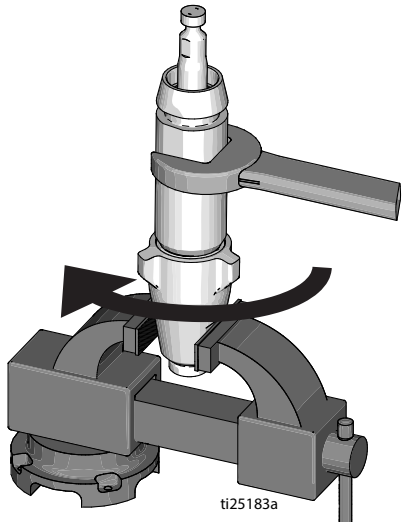
11. For GH130 torque foot valve to 110 ± 5 ft-lb (149 ± 7 N•m). For GH200/230/300 torque foot valve to 200 ± 15 ft-lb (271 ± 20 N•m).



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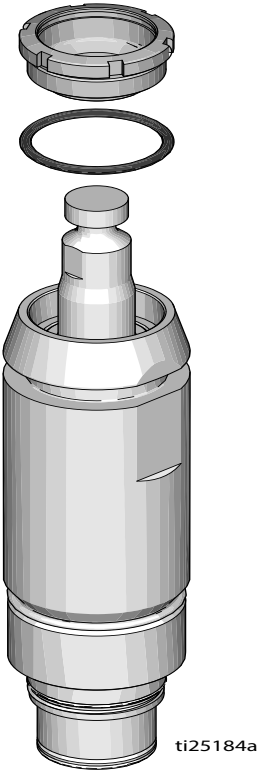
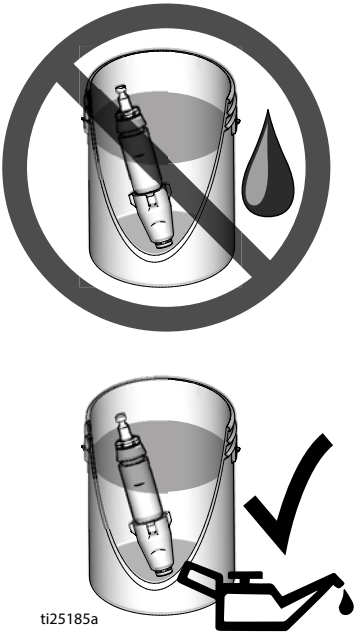
12. For GH130 torque packing nut to 125 ± 10 in-lbs (14 ± 1 N•m). All other GH models torque packing nut to 140 ± 10 in-lbs (16 ± 1 N•m).

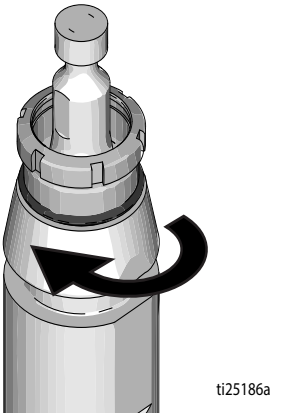


13. Storage



Throat Packing Adjustment

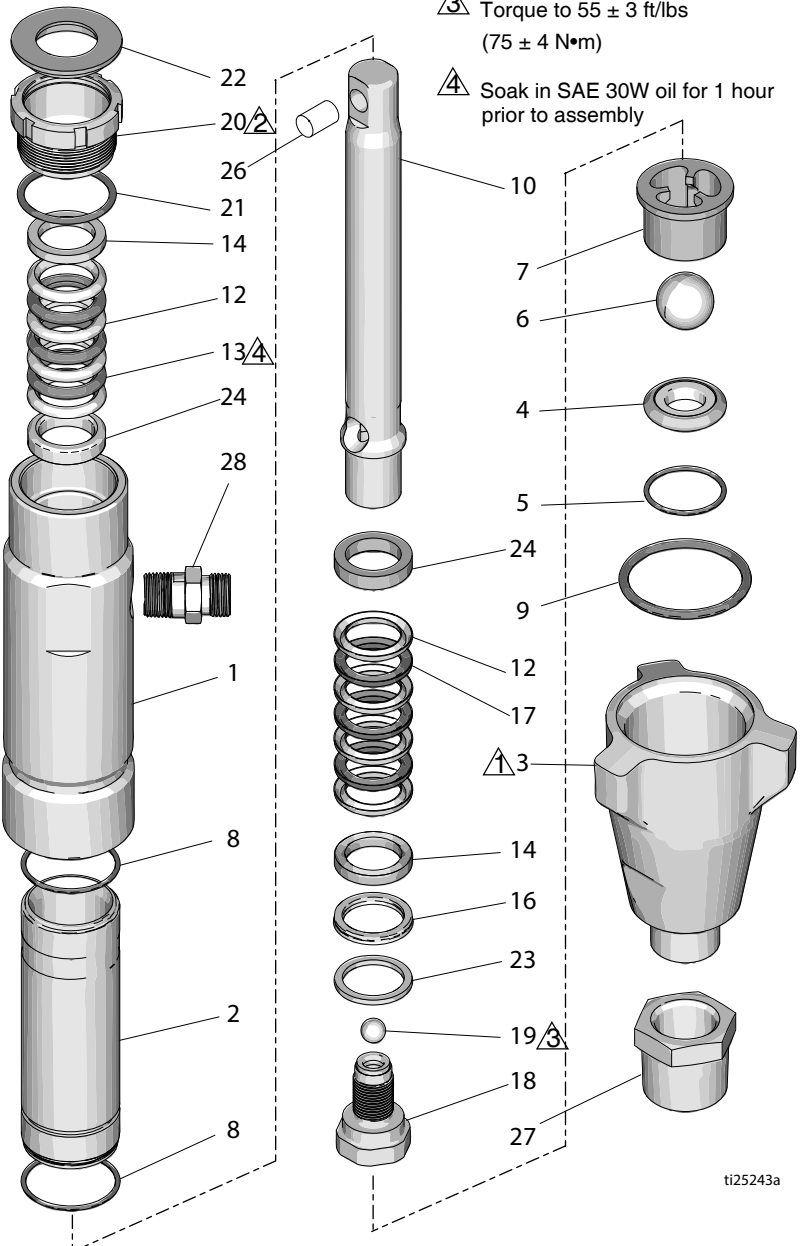
When pump packings begin to leak after much use, perform **Pressure Relief Procedure**, page 4, and tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required. Packing nut can be tightened without o-ring removal.



Notes

Parts

Pump 24B748



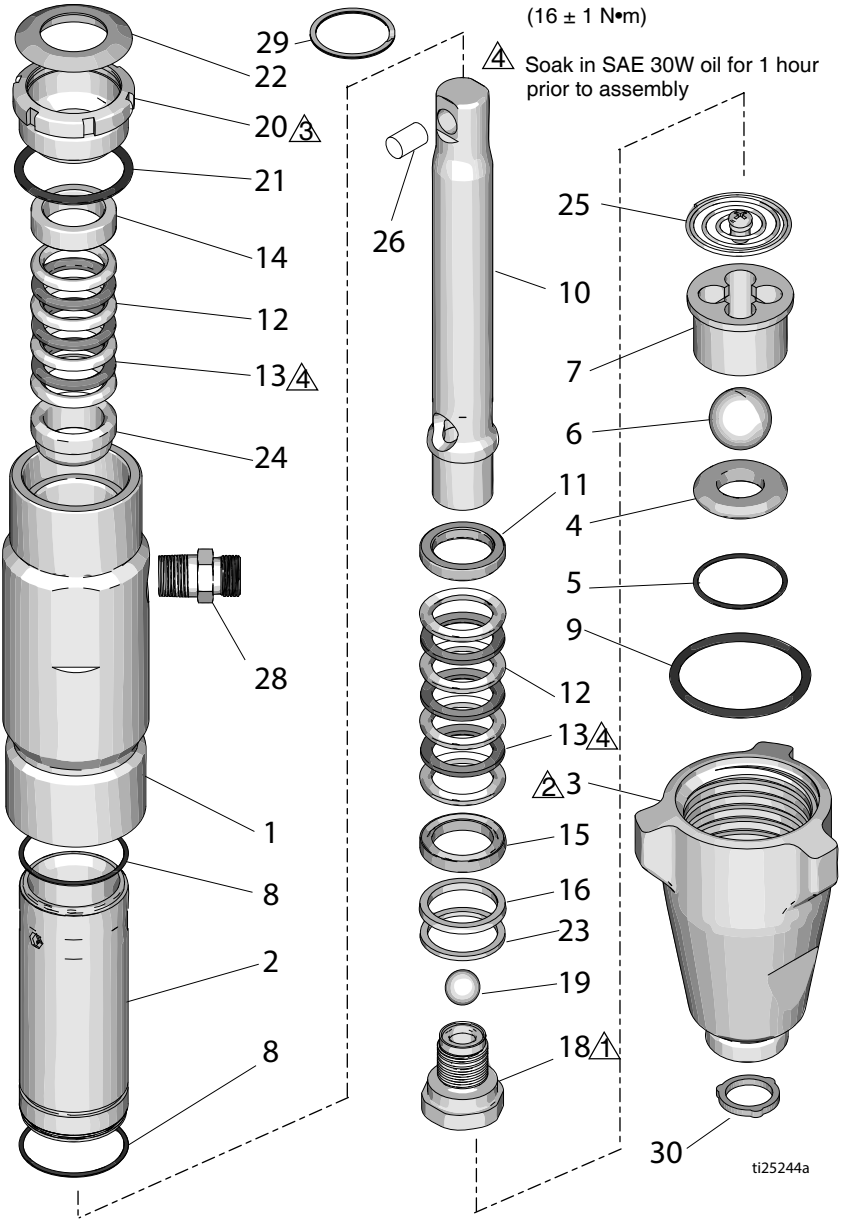
Parts List

Ref.	Part	Description	Qty.
1	288727	CYLINDER, pump	1
2	248210	SLEEVE, cylinder, chrome	1
3	195894	HOUSING, intake	1
4+	196866	SEAT, carbide	1
5+	108526	PACKING, o-ring, ptfe	1
6+	102972	BALL, metallic	1
7	193027	GUIDE, ball	1
8*	107098	PACKING, o-ring	2
9*	156633	PACKING, o-ring	1
10	288479	ROD, piston	1
12*	193125	PACKING, vee	8
13*	15E329	PACKING, vee	3
14*	183185	GLAND, packing, female	2
16*	118504	WIPER, piston	1
17*	15J382	PACKING, vee	3
18*	24U983	VALVE, piston	1
19*	101947	BALL, bearing	1
20	193032	NUT, packing	1
21	C20987	PACKING, o-ring	1
22*	183171	PLUG	1
23*	15C998	WASHER, backup	1
24*	183178	GLAND, packing, male	2
26	15J141	PIN, pump	1
27	15Y463	FITTING, bushing	1
28	196178	ADAPTER, nipple	1

** Included in Repair Kit 288471*
+ Included in Repair Kit 244199

Parts

Pump 24W995



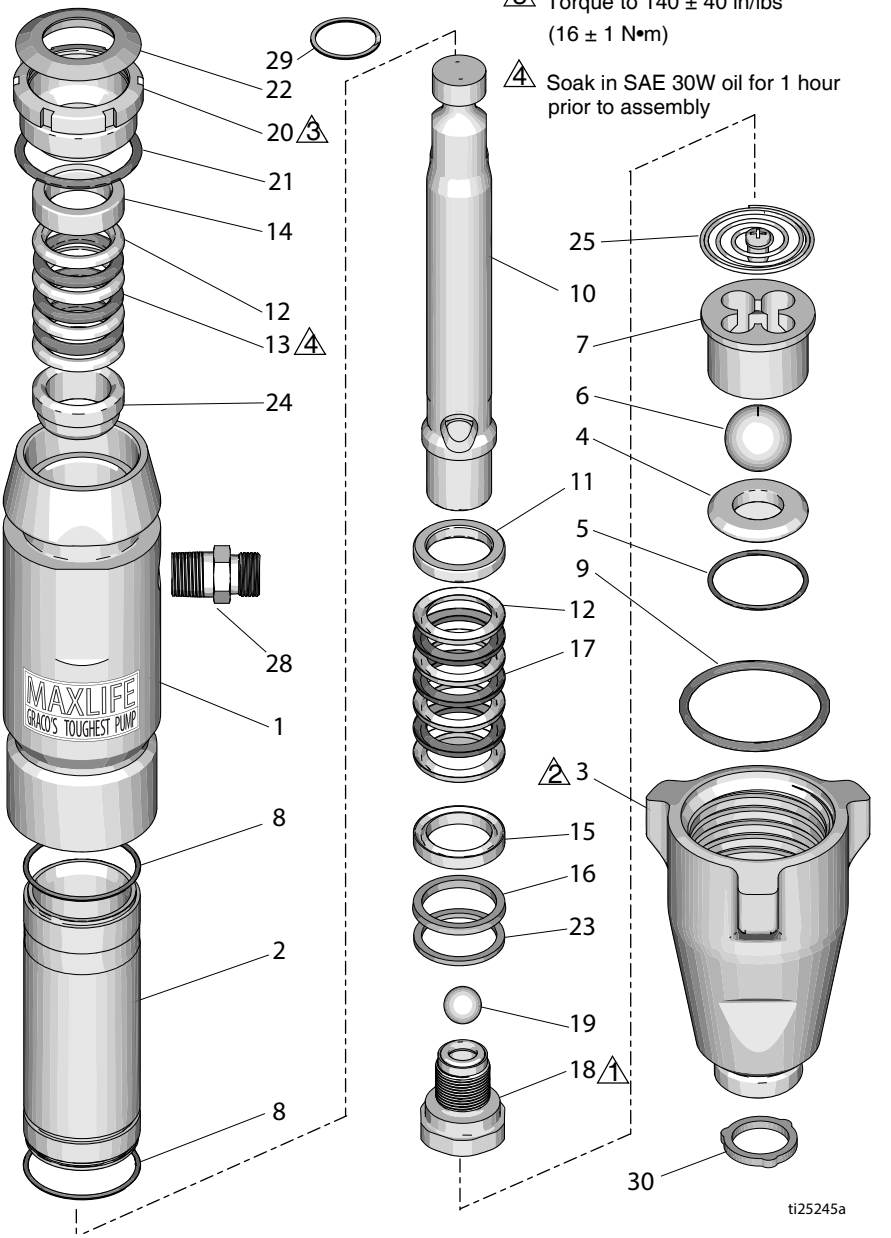
Parts List

Ref.	Part	Description	Qty.
1	245413	CYLINDER, pump	1
2			1
	248979	SLEEVE, cylinder, chrome	
	249121	SLEEVE, cylinder, MaxLife	
3	15E655	HOUSING, intake	1
4+	193395	SEAT, carbide	1
5*+	107098	PACKING, o-ring	1
6*+	107167	BALL, sst	1
7	198505	GUIDE, ball	1
8*	108822	PACKING, o-ring, ptfe	2
9*	160325	PACKING, o-ring	1
10			1
	249000	ROD, piston	
	249119	ROD, piston, MaxLife	
11*	189585	GLAND, packing, male	1
12*	198701	PACKING, vee	8
13*	198718	PACKING, vee	6
14*	15G657	GLAND, female	1
15*	189588	GLAND, packing, female	1
16*	119636	WIPER, piston	1
18	287388	VALVE, piston	1
19*	107203	BALL, valve, check	1
20	15J792	NUT, packing	1
21*	157195	PACKING, o-ring	1
22*	112590	PLUG, throat seal	1
23*	15J800	WASHER, back-up	1
24*	15G658	GLAND, male	1
25	245256	SPRING, intake ball	1
26	197443	PIN, pump	1
28	196178	ADAPTER, nipple	1
29	116551	RING, retaining	1
30	119566	WASHER	1

** Included in Repair Kit 17D601*
+ Included in Repair Kit 240918

Parts

Pump 24W996



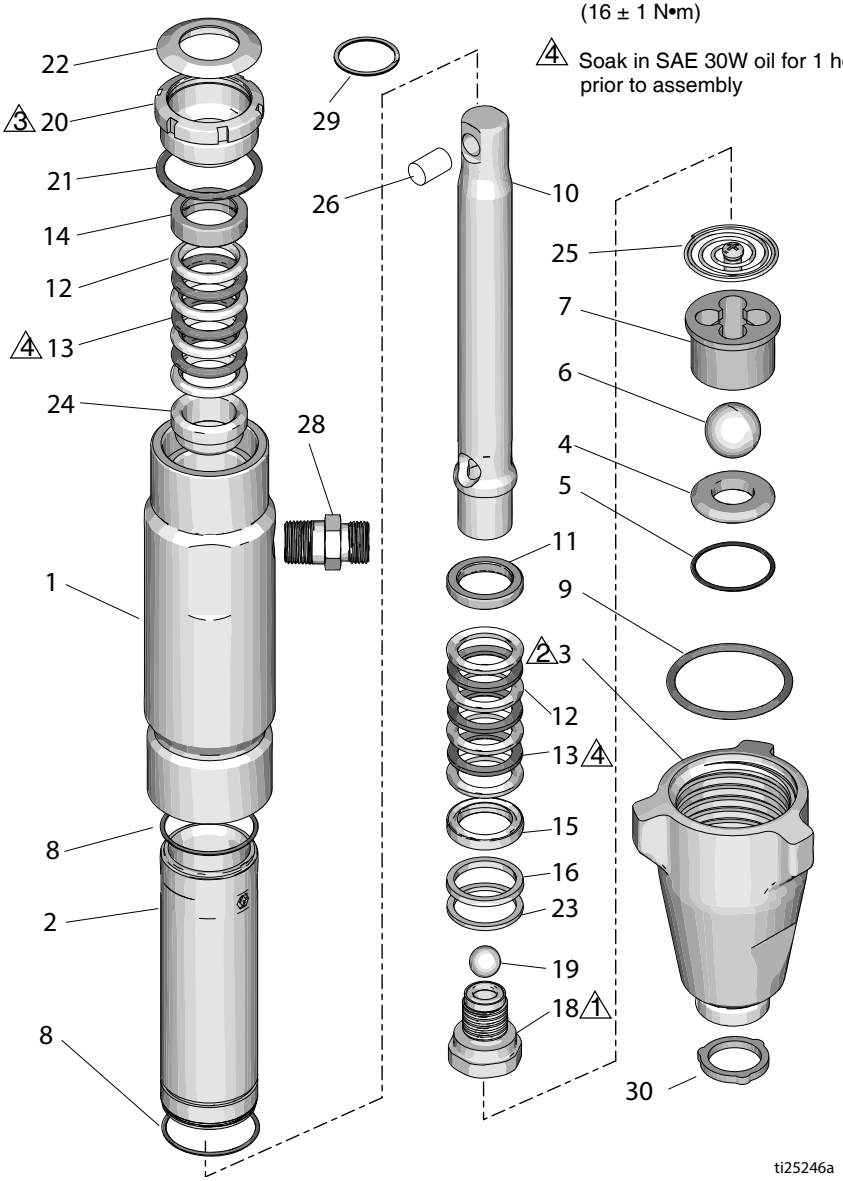
Parts List

Ref.	Part	Description	Qty.
1	17D122	CYLINDER, pump	1
2	249121	SLEEVE, cylinder	1
3	15E655	HOUSING, intake	1
4+	193395	SEAT, carbide	1
5*+	107098	PACKING, o-ring	1
6*+	107167	BALL, sst	1
7	198505	GUIDE, ball	1
8*	108822	PACKING, o-ring, ptfe	2
9*	160325	PACKING, o-ring	1
10	288469	ROD, piston	1
11*	189585	GLAND, packing, male	1
12*	198701	PACKING, vee	8
13*	198718	PACKING, vee	3
14*	15G657	GLAND, female	1
15*	189588	GLAND, packing, female	1
16*	119636	WIPER, piston	1
17*	15F875	PACKING, vee	3
18	287388	VALVE, piston	1
19*	107203	BALL, valve, check	1
20	15J792	NUT, packing	1
21*	157195	PACKING, o-ring	1
22*	112590	PLUG, throat seal	1
23*	15J800	WASHER, back-up	1
24*	15G658	GLAND, male	1
25	245256	SPRING, intake ball	1
28	15J413	FITTING, pump	1
30	119566	WASHER	1

** Included in Repair Kit 287813*
+ Included in Repair Kit 240918
NOTE: For Chromex Pump Kit order 24X018

Parts

Pump 24W997



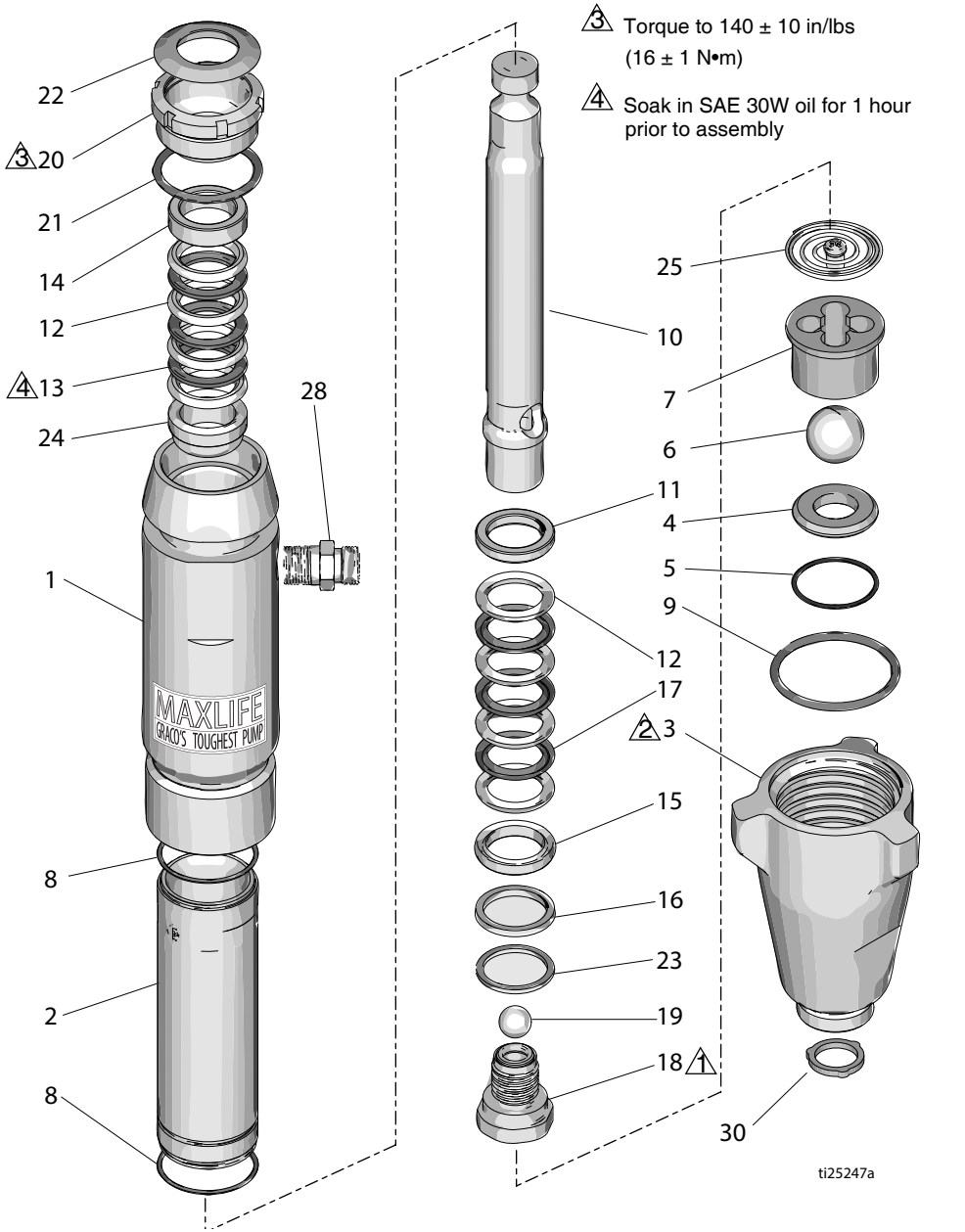
Parts List

Ref.	Part	Description	Qty.
1	245932	CYLINDER, pump	1
2			1
	248980	SLEEVE, cylinder, chrome	
	287817	SLEEVE, cylinder, MaxLife	
3	15E655	HOUSING, intake	1
4+	193395	SEAT, carbide	1
5*+	107098	PACKING, o-ring	1
6*+	107167	BALL, sst	1
7	198505	GUIDE, ball	1
8*	108822	PACKING, o-ring, ptfe	2
9*	160325	PACKING, o-ring	1
10			1
	249001	ROD, piston	
	287816	ROD, piston, MaxLife	
11*	189585	GLAND, packing, male	1
12*	198701	PACKING, vee	8
13*	198718	PACKING, vee	6
14*	15G657	GLAND, female	1
15*	189588	GLAND, packing, female	1
16*	119636	WIPER, piston	1
18	287388	VALVE, piston	1
19*	107203	BALL, valve, check	1
20	15J792	NUT, packing	1
21*	157195	PACKING, o-ring	1
22*	112590	PLUG, throat seal	1
23*	15J800	WASHER, back-up	1
24*	15G658	GLAND, male	1
25	245256	SPRING, intake ball	1
26	197443	PIN, pump	1
28	196178	ADAPTER, nipple	1
29	116551	RING, retaining	1
30	119566	WASHER	1

* *Included in Repair Kit 17D601*
\+ *Included in Repair Kit 240918*

Parts

Pump 24W998



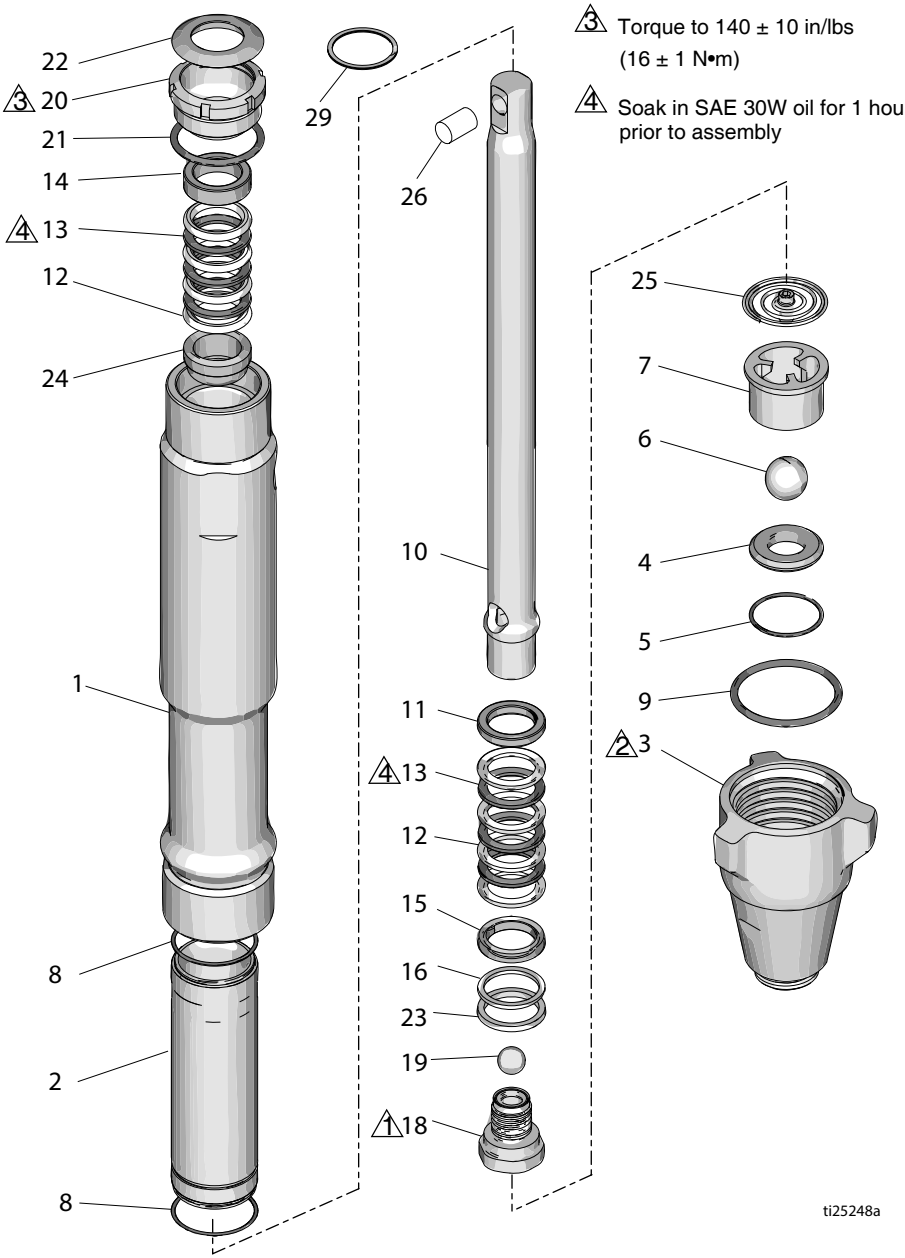
Parts List

Ref.	Part	Description	Qty.
1	17D123	CYLINDER, pump	1
2	287817	SLEEVE, cylinder, chrome	1
3	15E655	HOUSING, intake	1
4+	193395	SEAT, carbide	1
5*+	107098	PACKING, o-ring	1
6*+	107167	BALL, sst	1
7	198505	GUIDE, ball	1
8*	108822	PACKING, o-ring, ptfe	2
9*	160325	PACKING, o-ring	1
10	288470	ROD, piston	1
11*	189585	GLAND, packing, male	1
12*	198701	PACKING, vee	8
13*	198718	PACKING, vee	3
14*	15G657	GLAND, female	1
15*	189588	GLAND, packing, female	1
16*	119636	WIPER, piston	1
17*	15F875	PACKING, vee	3
18	287388	VALVE, piston	1
19*	107203	BALL, valve, check	1
20	15J792	NUT, packing	1
21*	157195	PACKING, o-ring	1
22*	112590	PLUG, throat seal	1
23*	15J800	WASHER, back-up	1
24*	15G658	GLAND, male	1
25	245256	SPRING, intake ball	1
28	15J413	FITTING, pump	1
30	119566	WASHER	1

* *Included in Repair Kit 287813*
\+ *Included in Repair Kit 240918*
NOTE: For Chromex Pump Replacement Kit order 24X019

Parts

Pump 24W999



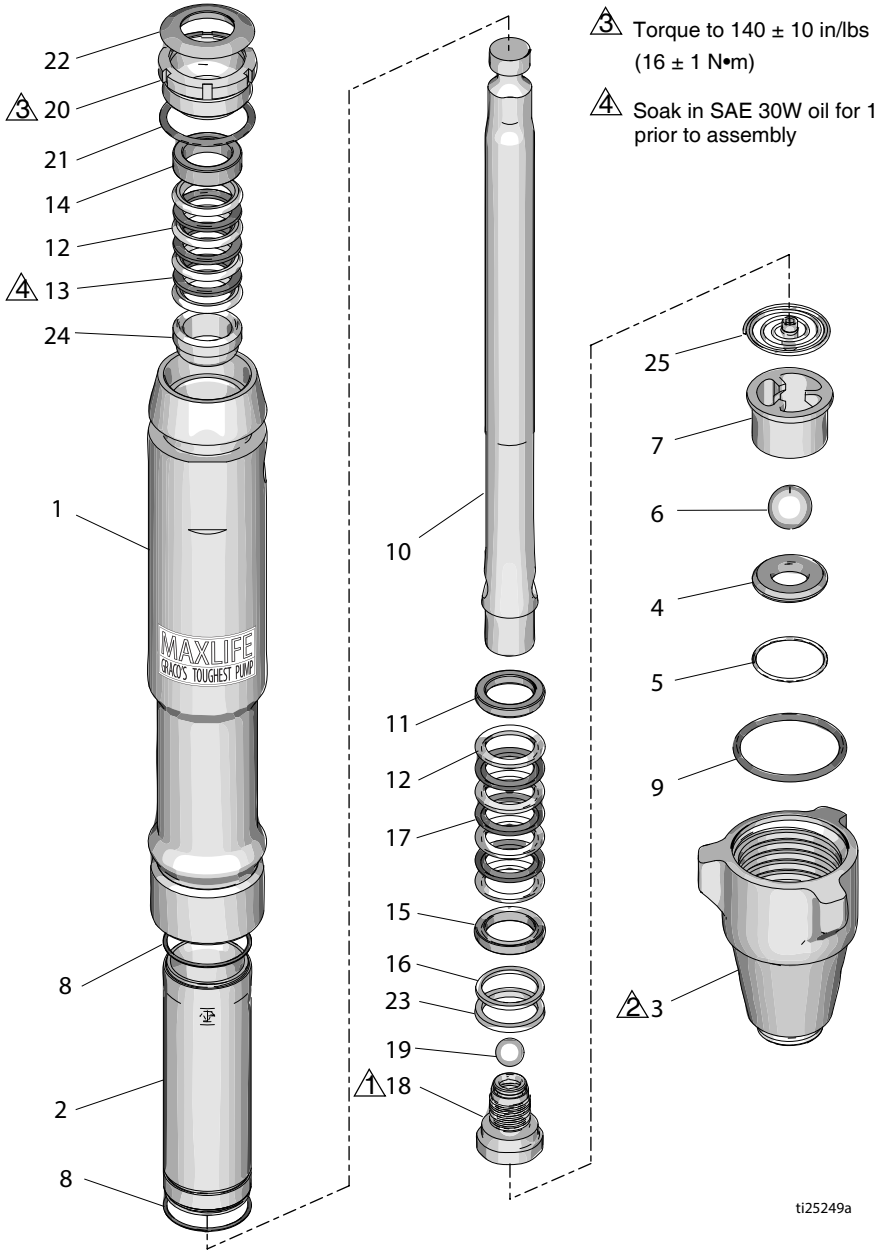
Parts List

Ref.	Part	Description	Qty.
1	17D124	CYLINDER, pump	1
2			1
	248980	SLEEVE, cylinder, chrome	
	287817	SLEEVE, cylinder, MaxLife	
3	15A303	HOUSING, intake	1
4+	15J038	SEAT, carbide	1
5*+	107098	PACKING, o-ring	1
6*+	118602	BALL, ceramic	1
7	193391	GUIDE, ball	1
8*	108822	PACKING, o-ring, ptfe	2
9*	160325	PACKING, o-ring	1
10	17D121	ROD, piston	1
11*	189585	GLAND, packing, male	1
12*	198701	PACKING, vee	8
13*	198718	PACKING, vee	6
14*	15G657	GLAND, female	1
15*	189588	GLAND, packing, female	1
16*	119636	WIPER, piston	1
18	287388	VALVE, piston	1
19*	118601	BALL, ceramic	1
20	15J792	NUT, packing	1
21*	157195	PACKING, o-ring	1
22*	112590	PLUG, throat seal	1
23*	15F183	WASHER, back-up	1
24*	15G658	GLAND, male	1
25+	24E027	SPRING, intake ball	1
26	197443	PIN, pump	1
29	116551	RING, retaining	1

** Included in Repair Kit 24N012*
+ Included in Repair Kit 24N013

Parts

Pump 24X001



Parts List

Ref.	Part	Description	Qty.
1	17D125	CYLINDER, pump	1
2	287817	SLEEVE, cylinder	1
3	15A303	HOUSING, intake	1
4+	15J038	SEAT, carbide	1
5*+	107098	PACKING, o-ring	1
6*+	118602	BALL, ceramic	1
7	193391	GUIDE, ball	8
8*	108822	PACKING, o-ring, ptfe	2
9*	160325	PACKING, o-ring	1
10	288821	ROD, piston	1
11*	189585	GLAND, packing, male	1
12*	198701	PACKING, vee	8
13*	198718	PACKING, vee	3
14*	15G657	GLAND, female	1
15*	189588	GLAND, packing, female	1
16*	119636	WIPER, piston	1
17*	15F875	PACKING, vee	3
18	287388	VALVE, piston	1
19*	118601	BALL, ceramic	1
20	15J792	NUT, packing	1
21*	157195	PACKING, o-ring	1
22*	112590	PLUG, throat seal	1
23*	15F183	WASHER, back-up	1
24*	15G658	GLAND, male	1
25+	24E027	SPRING, intake ball	1

** Included in Repair Kit 24X096*
+ Included in Repair Kit 24N013

Technical Specifications

Displacement Pumps	
Maximum fluid working pressure	3300 psi 25 bar, 22.8 MPa
Inlet/Outlet Sizes	
Fluid inlet size	1-5/16 UN (m) models 24W995, 24W996, 24W997, 24W998
	1-11 1/2 NPSM (M) models 24W999, 24X001
	3/4-14 npt (m) model 24B748
Fluid outlet size	3/8 npt (f)
Wetted materials on all models	stainless steel, PTFE, leather, nylon, zinc-plated carbon steel, tungsten carbide, brass, fluorelastomer, acetal, polyethylene, ceramic

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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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Original instructions. This manual contains English. MM 334654

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